KVT415A-R2
KVT417A-R2
KVT419A-R2

ServTray

Control your 4-post rack- or cabinet-mounted USB or PS/2 server with the compact, easy-to-use ServTray.

Includes a keyboard, mouse, LCD panel, and KVM module housed in an industry-standard 19" 1U-height rack drawer.

Customer Support Information

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500)
FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax 724-746-0746
Mailing address: Black Box Corporation, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

Federal Communications Commission and Industry Canada Radio Frequency Interference Statements

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

Instrucciones de Seguridad
(Normas Oficiales Mexicanas Electrical Safety Statement)

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
    - A: El cable de poder o el contacto ha sido dañado; u
    - B: Objectos han caído o líquido ha sido derramado dentro del aparato; o
    - C: El aparato ha sido expuesto a la lluvia; o
    - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
    - E: El aparato ha sido tirado o su cubierta ha sido dañada.

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or our products, contact Black Box Tech Support at **724-746-5500**
or go to **blackbox.com** and click on "Talk to Black Box."
You'll be live with one of our technical experts in less than 30 seconds.

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1. Specifications

Active Display Area: KVT415A-R2: 9"H x 12"W (22.8 x 30.4 cm);
KVT417A-R2: 10.6"H x 13.3"W (27 x 33.8 cm);
KVT419A-R2: 11.8"H x 14.8"W (30.1 x 37.6 cm)

Approvals: CE, FCC for the product; UL®, TUV, CE for power supply

Backlight Unit: KVT415A-R2: 2 CCFLs edge-light (top/bottom);
KVT417A-R2, KVT419A-R2: 4 CCFLs edge-light (top/bottom)

Brightness (cd/m^2): KVT415A-R2: 250 (center); KVT417A-R2: 350 (center); KVT419A-R2: 300 (center)

Contrast Ratio (Typical): KVT415A-R2: 500:1;
KVT417A-R2: 1000:1;
KVT419A-R2: 2000:1

Display Color (RGB 6-bits data): KVT415A-R2, KVT417A-R2: 262 K colors;
KVT419A-R2: 16.7 M colors

Display Mode: Normally white

Input Signal: RGB analog, H/V separate

Pixel Pitch: KVT415A-R2: 0.297 mm (H) x 0.297 mm (V);
KVT417A-R2: 0.264 mm (H) x 0.264 mm (V);
KVT419A-R2: 0.294 mm (H) x 0.294 mm (V)

Plug-n-Play VESA: VESA DDC 2B

Resolution: KVT415A-R2: 1024 x 768 @ 60 Hz;
KVT417A-R2, KVT419A-R2: 1280 x 1024 @ 60 Hz

NOTE: For optimum video performance, VGA resolution should be set to 1024 x 768 (for the KVT415A-R2) or 1280 x 1024 (for the KVT417A-R2 or KVT419A-R2).

Viewing Angle (Typical): KVT415A-R2: -70 to +70 (H), -60 to +60 (V);
KVT417A-R2: -80 to +80 (H), -80 to +80 (V);
KVT419A-R2: -85 to +85 (H), -85 to +85 (V)

Connectors: (1) Centronics® female

Temperature: Operating: 32 to 122° F (0 to 50° C);
Storage: -4 to +140° F (-20 to +60° C)

Humidity (Relative): Operating: 95%;
Storage: 95%

Power Consumption (Maximum, Typical): KVT415A-R2: 33 watts;
KVT417A-R2: 37 watts;
KVT419A-R2: 40 watts

Power: 12 VDC (from external 100–240-VAC power adapter), 47–63 Hz

Size: KVT415A-R2: 1.75"H (1U) x 15"W x 23.7" to 45.3"D (4.4 x 48.3 x 60.2 to 115.1 cm);
KVT417A-R2: 1.75"H (1U) x 17"W x 23.7" to 45.3"D (4.4 x 48.3 x 60.2 to 115.1 cm);
KVT419A-R2: 1.75"H (1U) x 19"W x 23.7" to 45.3"D (4.4 x 48.3 x 60.2 to 115.1 cm)

Weight: KVT415A-R2: 21 lb. (9.5 kg);
KVT417A-R2: 23 lb. (10.4 kg);
KVT419A-R2: 25 lb. (11.3 kg)

2. Overview

2.1 Introduction

Each ServTray Kit includes a ServTray™ (KVT415A-R2, KVT417A-R2, or KVT419A-R2), a KVM module (KVT6S1UV, KVT4S8PV, KVT4S8UV, KVT4S16PV, KVT4S16UV, KVT8DVIU, KVT1IP1UV, KVT1IP81UV, KVT1IP16UV, KVT8CATUV, KVT16CATUV, KVT1IP8CATUV, KVT1IP16CATUV, or KVT4IP16CATUV), and a Universal Rear Mounting Bracket Extension Kit. This manual describes how to use the ServTray and the Universal Rear Mounting Brackets, and a separate manual (included with your kit) explains how to use the KVM module.

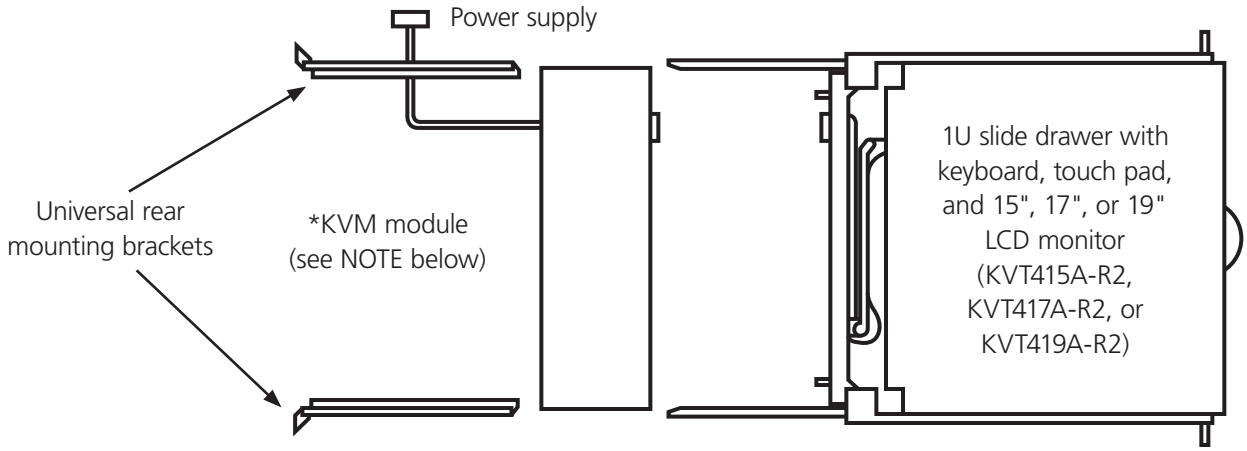
Control your 4-post-rack- or cabinet-mounted USB or PS/2® server with the compact, easy-to-use ServTray. It consists of a keyboard, mouse, LCD panel, and KVM module housed in an industry-standard 19" 1U-height rack drawer (see Figure 2-1).

Three models are available: the ServTray with a 15" LCD panel (KVT415A-R2), the ServTray with a 17" LCD panel (KVT417A-R2), and the ServTray with a 19" LCD panel (KVT419A-R2). All models feature a full 105-key, low-profile, sturdy keyboard and touch pad with an ergonomically designed hand rest. The KVT415A-R2 has a maximum resolution of 1024 x 768, and the KVT417A-R2 and KVT419A-R2 have a maximum resolution of 1280 x 1024.

Install the ServTray in 4-post racks or cabinets that are 23.7" to 45.3"D (60.2 to 115.1 cm). When installing the ServTray, you'll need to use the Universal Rear Mounting Brackets (described in Section 2.4) that are included in your ServTray Kit.

A KVM module is also included with the ServTray. To control more than one USB or PS/2 server, connect the ServTray to one of the other KVM tray modules listed above.

The KVM module comes with a universal Centronics® 36-pin connector; use it to connect the module to the console drawer. The module has a barrel connector for power (or a locking power connector for the CATx modules). The large screws are used in place of 10-32 or 12-24 screws (described in Chapter 3, not included) if required by your rack.


Power supply
Universal rear mounting brackets
*KVM module (see NOTE below)
1U slide drawer with keyboard, touch pad, and 15", 17", or 19" LCD monitor (KVT415A-R2, KVT417A-R2, or KVT419A-R2)

**NOTE: KVM modules include KVT6S1UV, KVT4S8PV, KVT4S8UV, KVT4S16PV, KVT4S16UV, KVT8DVIU, KVT1IP1UV, KVT1IP81UV, KVT1IP16UV, KVT8CATUV, KVT16CATUV, KVT1IP8CATUV, KVT1IP16CATUV, and KVT4IP16CATUV.*

Figure 2-1. ServTray Kit components (left to right): Uiniversal rear mounting brackets, KVM Module with power supply, and 1U slide drawer.

2.2 What's Included

- (1) ServTray 15", 17", or 19" LCD console (LCD panel, keyboard, and mouse pad console drawer)
- (1) KVM module with power supply (based on product code)
- (1) universal rear rail kit (includes [2] brackets, [2] extensions, and [8] screws)
- (10) 0.19" x 0.43" (0.5 x 1.1 cm) screws

• (10) 0.12" x 0.24" (0.3 x 0.6 cm) screws

• This user's manual

Accessories that you might or will need to purchase include:

• 12-24 or 10-32 nuts/bolts (you might need these to mount the KVM tray in the rack/cabinet)

2.3 KVM Switch Module Compatibility

• KVT6S1UV (1-Port DVI/VGA USB and PS/2 Module, part number KVT6S1UV with user's manual)

• KVT4S8PV (8-Port VGA USB and PS/2 Module, part number KVT4S8PV with user's manual)

• KVT4S8UV (8-Port VGA USB and PS/2 Module, part number KVT4S8UV wiht user's manual)

• KVT4S16PV (16-Port VGA PS/2 Module, part number KVT4S16PV with user's manual)

• KVT4S16UV (16-Port VGA USB and PS/2 Module, part number KVT4S16UV with user's manual)

• KVT1IP1UV (1-Port USB and PS/2 IP enabled Module, part number KVT1IP1UV with user's manual)

• KVT1IP8UV (8-Port VGA USB and PS/2 IP enabled Module, part number KVT1IP8UV with user's manual)

• KVT1IP16UV (16-Port VGA USB and PS/2 IP enabled Module, part number KVT1IP16UV with user's manual)

• KVT8CATUV (8-Port CX CATx Module, part number KVT8CATUV with user's manual)

• KVT16CATUV (16-Port CX CATx Module, part number KVT16CATUV with user's manual)

• KVT1IP8CATUV (8-Port CX CATx Module, part number KVT1IP8CATUV with user"s manual)

• KVT1IP16CATUV (16-Port CX CATx Module, part number KVT1IP16CATUV with user's manual)

• KV4IP16CATUV (16-Port CX CATx Module, part number KVT4IP16CATUV with user's manual)

2.4 Universal Rear Mounting Brackets

Figure 2-2 shows the rear bracket pair, and Figures 2-3 and 2-4 show the ServTray in its maximum and minimum extension positions.

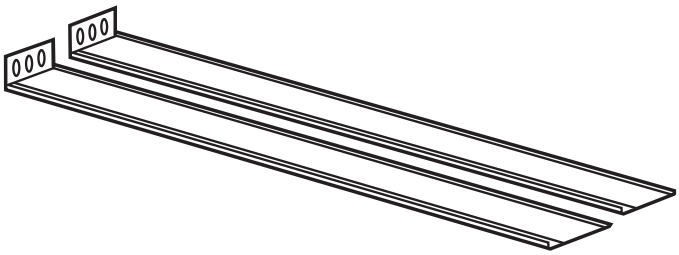


Figure 2-2. Rear bracket pair.

NOTE: The lengths in Figures 2-3 and 2-4 are the depths measured between the front pole and rear pole inside a 4-post rack or cabinet, not the outside depth of the enclosure.

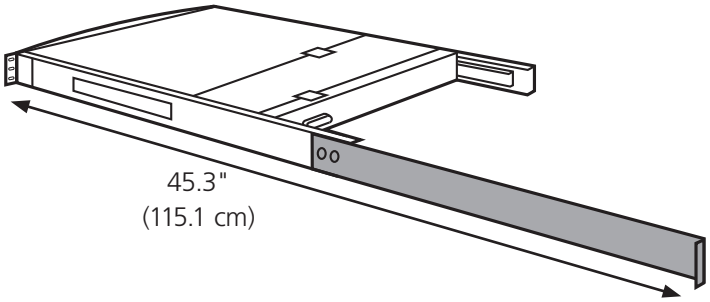


Figure 2-3. The maximum depth of the unit.

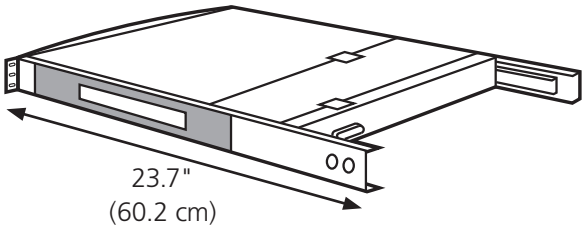


Figure 2-4. The minimum depth of the unit.

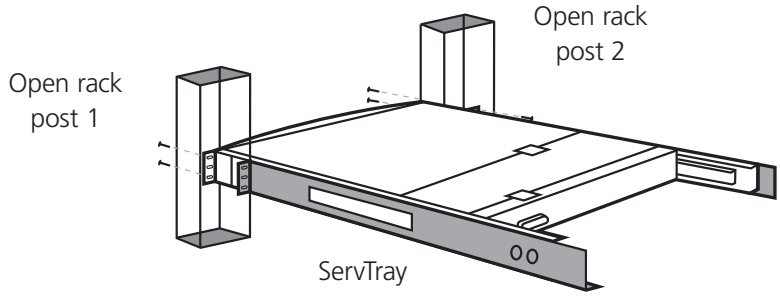


Figure 2-5. ServTray installed on an open rack.

3. Assembly and Installation

1. Choose a proper position in the cabinet for the rack drawer.
2. Using eight counter-sunk screws (included), attach the extensions (included with your ServTray kit) to both sides of the KVM switch module. See Figures 3-1 through 3-5. The wide-edged plastic extension should be on the top side (see Figure 3-5).

NOTE: The CATx KVM Switch Modules will only accept between (2) and (4) mounting screws on each extension, depending on kit part numbers.

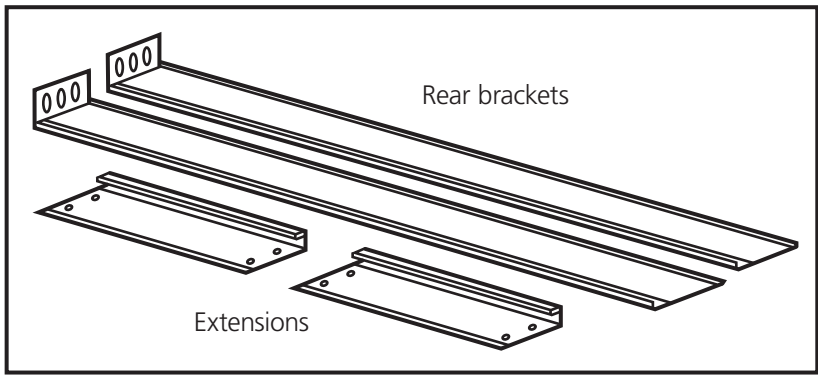


Figure 3-1. Rear brackets and extensions.

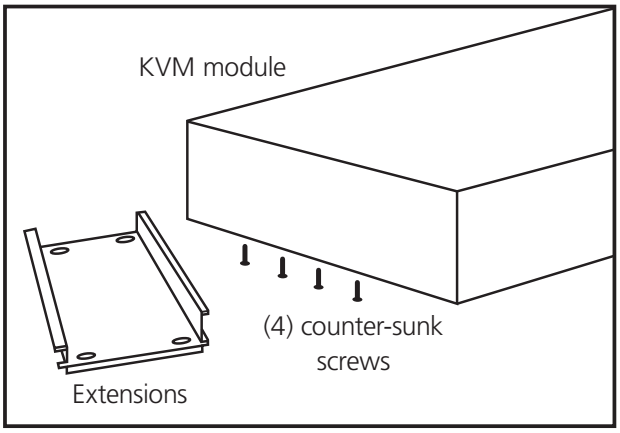


Figure 3-2. Extensions and KVM module.

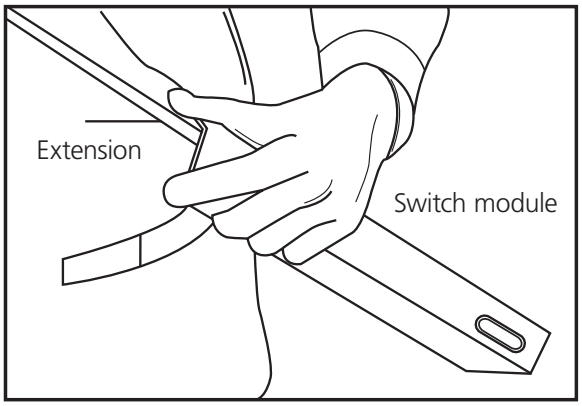


Figure 3-3. Attaching the extensions to one side of the KVM switch module.

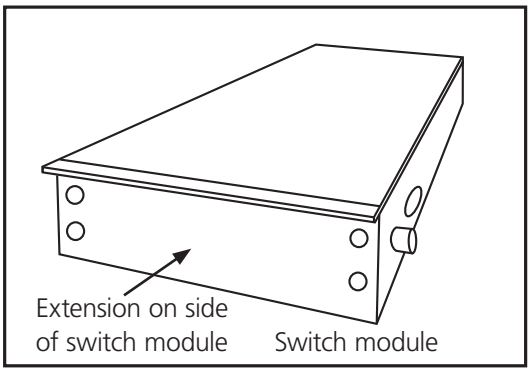


Figure 3-4. KVM switch module with extensions attached.

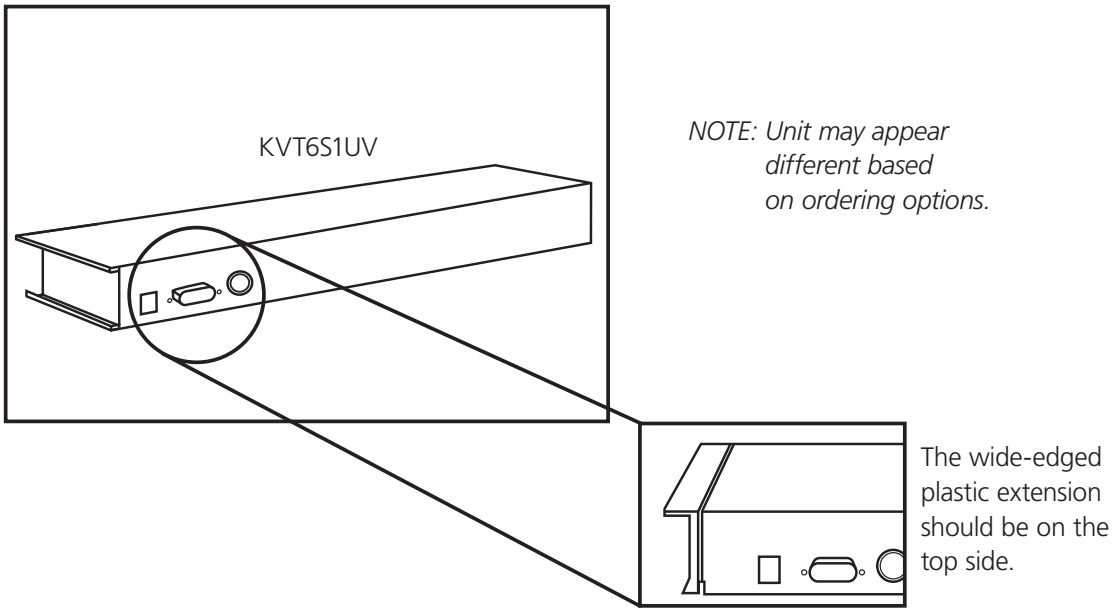

KVT6S1UV
NOTE: Unit may appear different based on ordering options.
The wide-edged plastic extension should be on the top side.

Figure 3-5. Back view of module with extensions attached.

3. Remove the safety stopper from the console drawer (see Figure 3-6). The safety stopper keeps the drawer from sliding out during transportation.

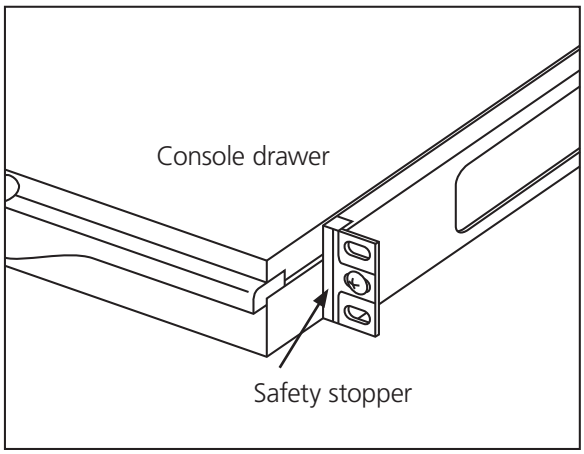


Figure 3-6. Locating and removing the safety stopper.

WARNING: After the safety stopper is removed, the drawer may slide out when tilted. This could cause serious injury; keep the drawer assembly level to avoid this.

4. Slide the rear bracket into both sides of the unit. Make sure that the two wheels with screws are inside the bracket's track while sliding in the rear bracket. See Figure 3-7.

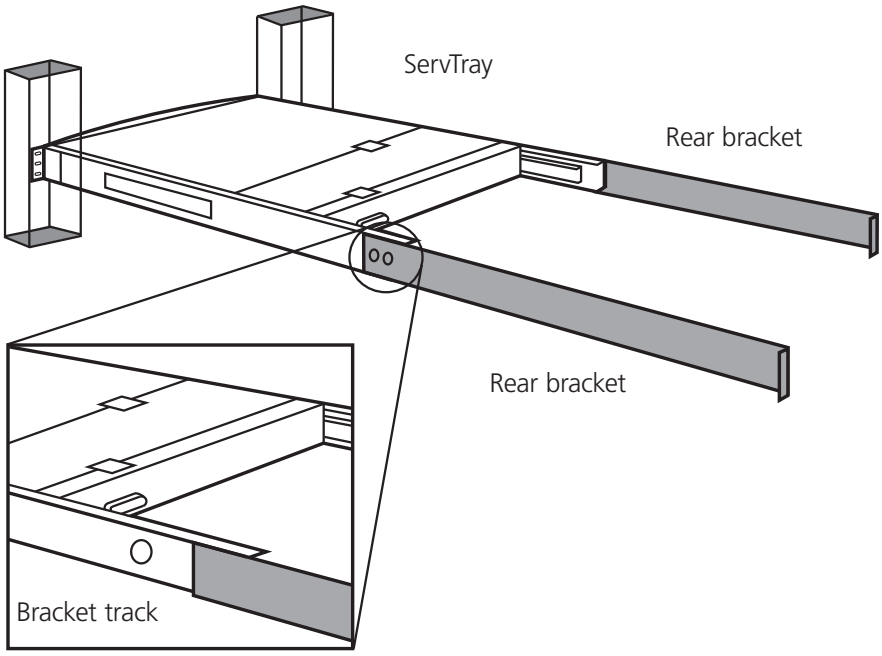


Figure 3-7. Install the rear bracket onto the ServTray KVM Tray's extensions.

5. Use four 10-32 or 12-24 screws (not included) to fasten the console drawer onto the front brackets. (See Figure 3-8.) The metal brackets shown in the figure support the console's rear side.

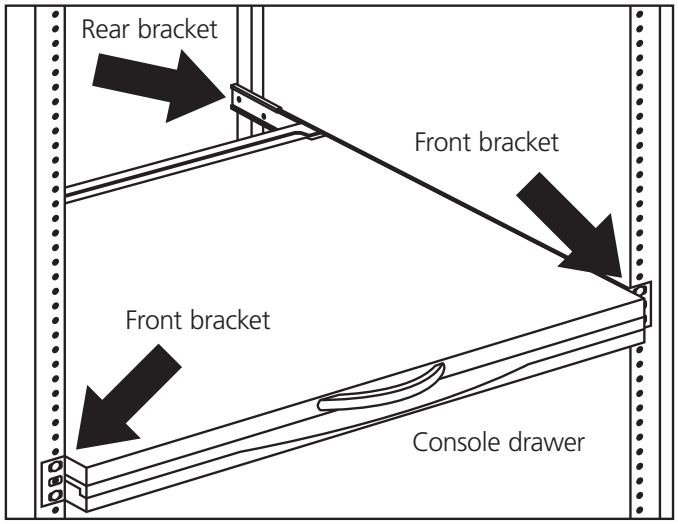


Figure 3-8. Securing the console drawer to the cabinet's front brackets.

6. Push the KVM switch module evenly towards the drawer. See Figure 3-9.

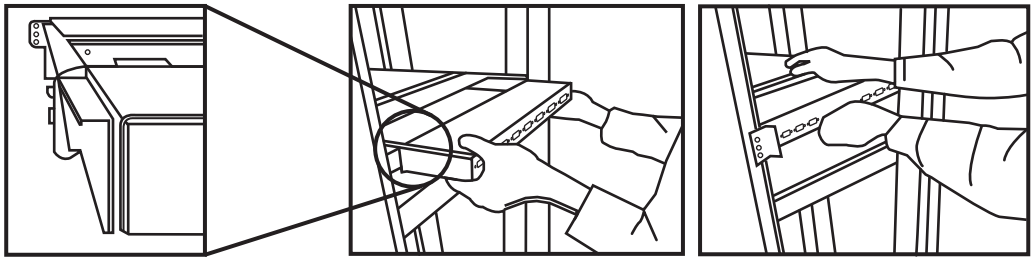


Figure 3-9. Pushing the module towards the drawer.

7. Slide out the console drawer. Push the KVM module evenly toward the drawer and secure both units using the attached thumbscrews. See Figure 3-10.

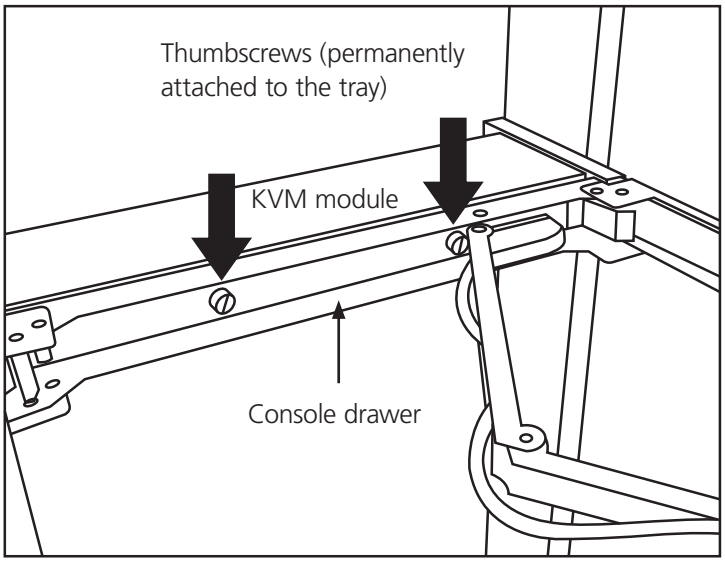


Figure 3-10. Securing the KVM module to the console drawer.

8. Make sure the Centronics connectors on the KVM module and attached cable are firmly mated. See Figure 3-11.

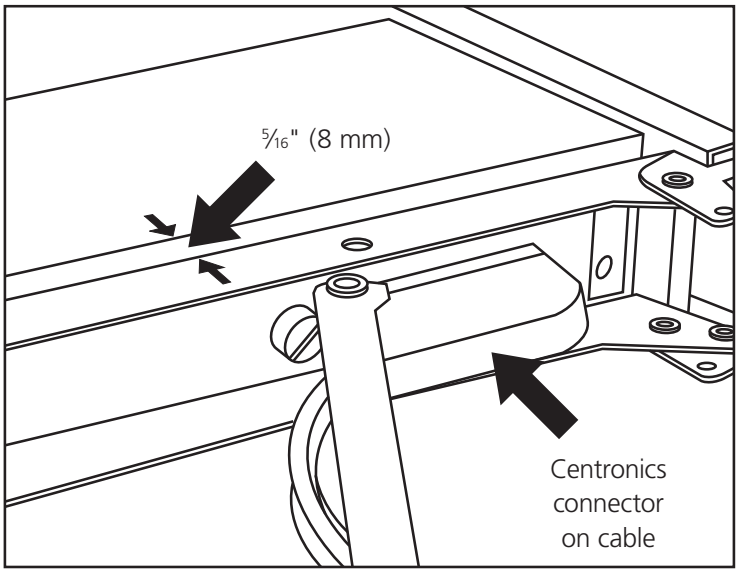


Figure 3-11. Centronics connectors.

9. Connect the power supply to the barrel connector on the KVM module.
10. For operation, pull out the drawer from the 4-post rack or cabinet and latch it in the extended position. A locking mechanism locks the drawer when it's pulled out, pushed in, or folded down. When not in use, push in the drawer, then fold down, lock, and secure the display.

11. Once the ServTray is installed in the 4-post rack or cabinet, you can connect it to a computer. The KVM module's connectors attach to the KVM connectors on a PS/2 CPU via the 3-in-1 (PS/2, PS/2, VGA) Cable (included), or they connect to the HD15 and keyboard/mouse connectors on a USB CPU via the 2-in-1 (USB, VGA) Cable (included), or they connect to the DVI and keyboard/mouse connectors on a USB CPU via the 2-in-1 (USB, DVI) cable. All cables are shown in Figure 3-12. If you choose to use the Digital Video Interface, connect the DVI cable between the target PC and the KVM Switch Module.

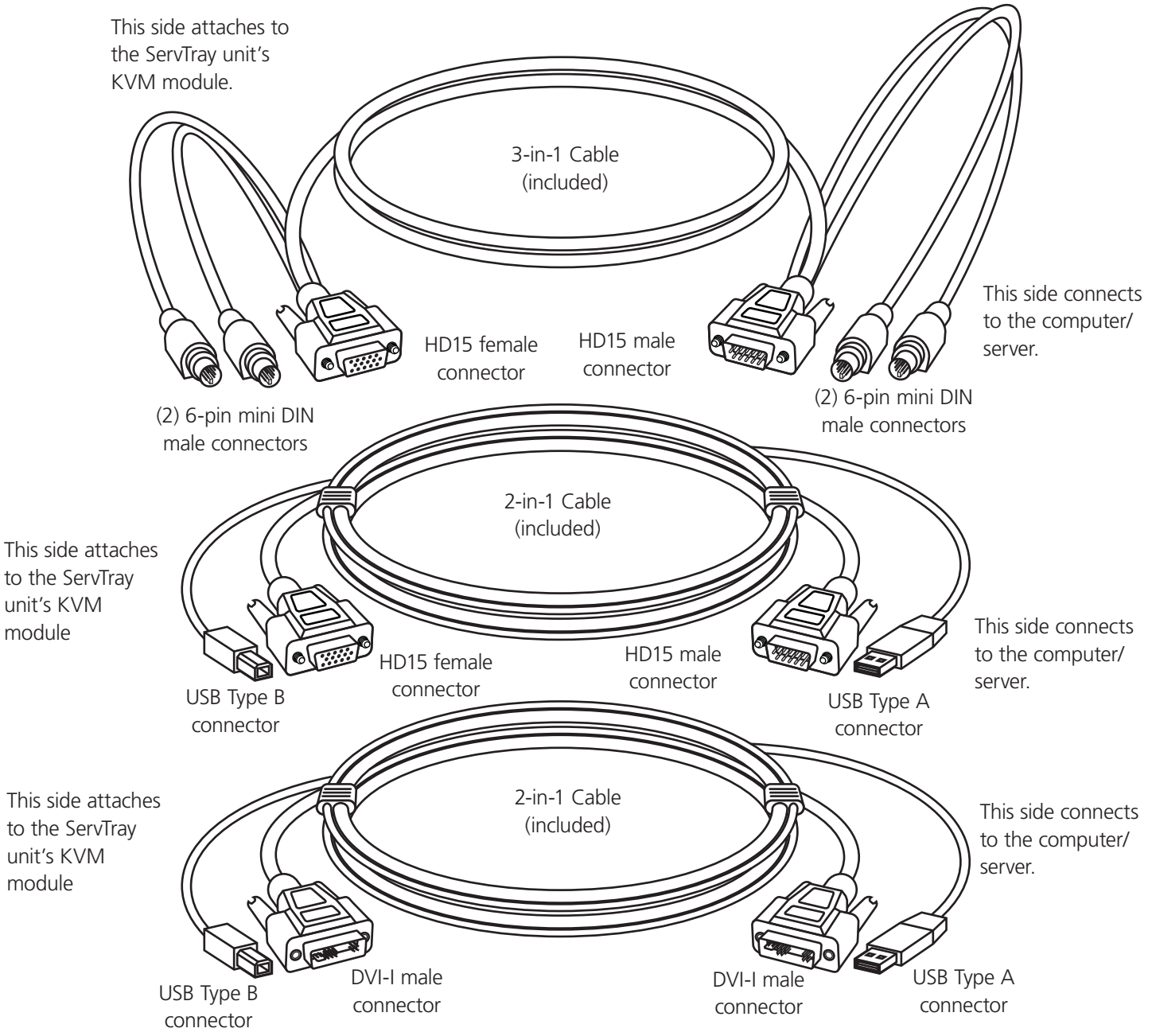

This side attaches to the ServTray unit's KVM module.
3-in-1 Cable (included)
HD15 female connector
HD15 male connector
This side connects to the computer/ server.
(2) 6-pin mini DIN male connectors
(2) 6-pin mini DIN male connectors
2-in-1 Cable (included)
This side attaches to the ServTray unit's KVM module
HD15 female connector
HD15 male connector
This side connects to the computer/ server.
USB Type B connector
USB Type A connector
2-in-1 Cable (included)
This side attaches to the ServTray unit's KVM module
This side connects to the computer/ server.
USB Type B connector
DVI-I male connector
DVI-I male connector
USB Type A connector

Figure 3-12. Cable for connecting the KVM module to a computer.

NOTE: These cables are included only with the 1-Port VGA/DVI PS2/USB (KVT6S1UV) module. All other modules have the VGA/PS2 and VGA/USB cables.

4. Operation

Once the ServTray is installed and connected to a PS/2 or USB CPU or ServSwitch, it's ready for operation. Control the unit via the buttons on the LCD panel (labeled 1 and 2 in Figure 4-1) and the LCD panel power switch (labeled 3 in Figure 4-1). Monitor the status via the keyboard status indicators (labeled 4, 5, and 6 in Figure 4-1).

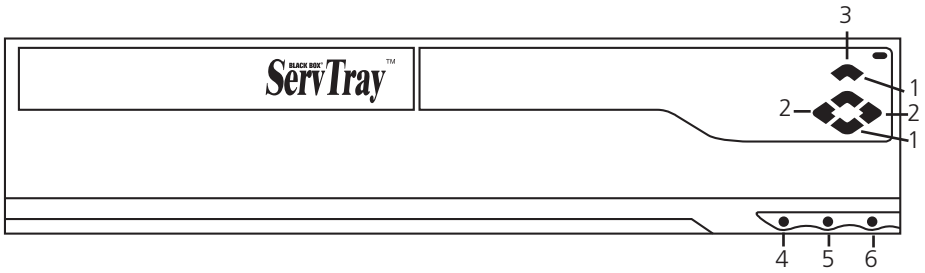


Figure 4-1. The ServTray's components.

1. Use the LCD panel menu buttons (1 in Figure 4-1) to activate the OSD menu to set the LCD panel as an ordinary LCD montior.
2. Use the LCD panel adjustment buttons (2 in Figure 4-1) to adjust settings for the LCD panel.
3. Switch the power to the LCD panel on or off via the power switch (3 in Figure 4-1).
4. Use the keyboard status indicators (Num Lock, Caps Lock, and Scroll Lock) to view status.

- The Num Lock Key LED (labeled 4) shows the Keyboard Num Lock Status (on or off).
- The Caps Lock Key LED (labeled 5) shows the Keyboard Caps Lock Status (on or off).
- The Scroll Lock Key LED (labeled 6) shows the Keyboard Scroll Lock Status (on or off).

5. Use the touch pad (see Figure 4-2) to simulate a wheel mouse. The touch pad's area to the right side of the two small triangular marks is the simulated scroll area. Move your finger along this area to scroll up or down on the computer's screen. The touch pad area enables you to move the cursor anywhere on your computer's screen by sliding your finger along this area.

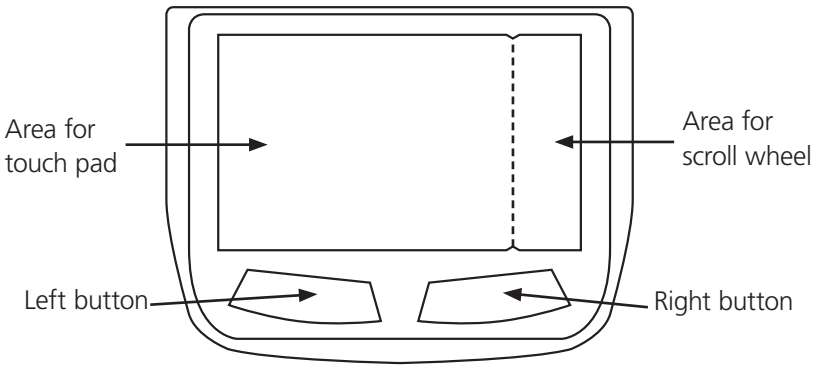


Figure 4-2. Touch pad.

5. Troubleshooting

5.1 Contacting Black Box

If you determine that your ServTray is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box Technical Support at 724-746-5500 or info@blackbox.com.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem.
- when the problem occurs.
- the components involved in the problem.
- any particular application that, when used, appears to create the problem or make it worse.

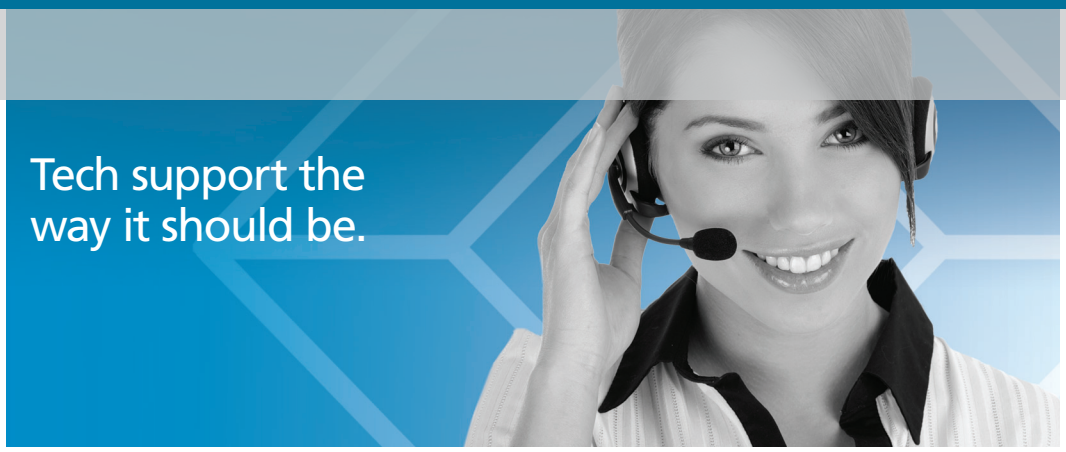
5.2 Shipping and Packaging

If you need to transport or ship your ServTray:

- Package it carefully. We recommend that you use the original container.
- If you are returning the unit, make sure you include everything you received with it. Before you ship for return or repair, contact Black Box to get a Return Authorization (RA) number.

NOTES

Black Box Tech Support: FREE! Live. 24/7.



Great tech support is just 30 seconds away at 724-746-5500 or blackbox.com.

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KVT415A-R2, version 2